

CLAIMS

We claim:

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1. A network system providing a home network between at least a first customer premise device and a second customer premise device within a customer premise, the system comprising:

5 a first digital subscriber loop modem in communication with the first customer premise device; and

a second digital subscriber loop modem in communication with the second customer premise device, the second and first digital subscriber loop modems in communication over a common wiring connection; and

the first and second digital subscriber loop modems provide a network connection between the first and second computer devices within the customer premise;

wherein the home network accommodates DSL connections with the telephone company central office during home networking sessions.

2. The invention of claim 1 wherein the digital subscriber modems utilize a duplex communication channel between them.

3. The invention of claim 1 wherein the network connection between the first and second digital subscriber loop modems utilize the digital subscriber loop frequency spectrum to
20 communicate between the first and second computer devices.

4. The invention of claim 3 wherein the spectrum used for home networking is contained within the power spectral density mask used for DSL connections.

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5. The invention of claim 3 wherein the portion of spectrum used for home networking that corresponds to the DSL downstream spectrum is a function of the received power in that spectrum measured during previous DSL connections.

5 6. The invention of claim 1 wherein the home networking initiation and connection signaling does not invoke a DSL connection attempt.

7. The invention of claim 1 wherein the G.hs protocol is utilized to establish the network communication session.

8. The invention of claim 7 wherein the G.hs signaling would be performed over a set of tones specifically for home networking session establishment.

9. The invention of claim 7 wherein one consumer premise modem initiates a home network connection by signaling with the central office DSL modem and other consumer premise modems decipher the communications but do not participate in the establishment of the network connection.

10. The invention of claim 9 wherein the flag signal comprises of a 'no common mode' selection in a mode select message followed by a non-standard information field pertaining to establishing a home networking connection.

11. The invention of claim 1 wherein timing normally provided by the central office modem is provided by a consumer premise modem during a networking session.

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12. The invention of claim 1 wherein the digital subscriber loop protocol comprises a G.lite protocol.

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13. The invention of claim 12 wherein a timing signal is provided in the absence of a downstream pilot.

14. The invention of claim 13 wherein the DMT carrier 16 provides the timing signal.

15. The invention of claim 1 wherein the digital subscriber loop modems provide an Asymmetric Digital Subscriber Loop System.

16. The invention of claim 1 wherein the central office comprises a node on the network.

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17. The invention of claim 16 wherein the central office modem addresses a network connection to a particular home network modem using G.hs.

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18. The invention of claim 1 wherein the first and second digital subscriber loop modems recognize the initiation signals for a digital subscriber loop connection from the central office DSL modem.

19. The invention of claim 1 wherein the first and second digital subscriber loop modems recognize the initiation signals for a digital subscriber loop connection from the customer premise DSL modem.

20. The invention of claim 1 wherein the first and second digital subscriber loop modems are restricted to transmit at a reduced transmission power level to accommodate digital subscriber loop connections with the central office.

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21. A local area network within a customer premises utilizing digital subscriber line equipment normally used for providing a digital subscriber line, comprising:

a plurality of customer premise digital subscriber line modems providing communication between computer devices;

a first digital subscriber line modem providing communications with a first computer device; and

a second digital subscriber line modem providing communications to a second computer device;

wherein the first and second digital subscriber line modems communicate to each other to provide the local area network without requiring communications be routed through the central office.

22. The invention of claim 21 wherein the first and second digital subscriber line modems utilize the existing DSL frequency spectrum to communicate data over the local area network.

23. The invention of claim 21 wherein the first and second digital subscriber modems utilize a duplex communication channel between them.

24. The invention of claim 21 wherein the central office comprises a node on the network and communications are routed through the central office.

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25. A local area network providing a network connection within a customer premise,
5 comprising:

a plurality of customer premise digital subscriber line modems providing communication between computer devices;

a first digital subscriber line modem providing communications with a first computer device; and

a second digital subscriber line modem providing communications to a second computer device;

wherein the network connection between the first and second digital subscriber loop modems utilize the digital subscriber loop frequency spectrum to communicate between the first and second computer devices.